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3 **SELF-CALIBRATING INSTRUMENTED TOW CABLE**

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5 **ABSTRACT OF THE DISCLOSURE**

6 A tow cable in which the temperature of the cable is
7 measurable by the use of multiplexing capability intrinsic to
8 optical fibers in which the optical fibers are positioned at the
9 center of the tow cable and wound as part of two layers of
10 surrounding strength wires. The optical fibers of the two
11 layers intersect a vector extending radially from the optical
12 fiber at the center to an outer surface of the tow cable. Light
13 signals emitted from a multiplexer to positions along the
14 optical fibers, in which the positions intersect the vector,
15 return light signals from the positions to provide measurements
16 that in conjunction with a data processor further provide
17 temperature measurement of the outer boundary of the tow cable.